

## CLAIMS

1. A vehicle occupant restraint device mounted on a back of an occupant's seat, for restraining a shoulder of an occupant  
5 thereby to protect a body of said occupant against a motor vehicle accident comprising:

a receiving portion for receiving a shoulder side of said occupant softly;

an arm portion; and

10 an instantaneous turning mechanism unit for moving said receiving portion, when an impact exceeding a predetermined level is applied to a vehicle, instantaneously from an initial position to a predetermined target position through said arm portion so that said receiving portion may take an arranged  
15 state or position for receiving said shoulder side of said occupant.

2. A vehicle occupant restraint device mounted on a back of an occupant's seat, for restraining a shoulder of an occupant  
20 thereby to protect a body of said occupant against a motor vehicle accident comprising:

a drive unit for driving in response to a collision sense signal;

a rotating shaft adapted to be triggered by driving of  
25 said drive unit for instantaneously moving from an initial

position to a predetermined target position;

an arm portion mounted on said rotating shaft; and

a receiving portion mounted on the other end of said arm portion for receiving a shoulder side of said occupant softly.

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3. A vehicle occupant restraint device as set forth in claim 2: wherein said rotating shaft includes a flat shaft; a spline shaft and a torsion spring for applying rotation of said flat shaft and said spline shaft; a cam rotor for locking the applying force of said torsion spring usually engages with said flat shaft and said spline shaft; a gear lock for transmitting the rotation of said drive unit engages with the cam rotor on a side of said flat shaft; and a lock plate for locking said shoulder receiving portion at a predetermined position engages with the cam rotor on a side of said spline shaft.

4. A vehicle occupant restraint device as set forth in claim 3: wherein a lock state between said cam rotor and said gear lock on the side of said flat shaft and/or a lock state between said cam rotor and said lock plate on the side of said spline shaft can be easily released.

5. A vehicle occupant restraint device as set forth in claim 2, 3 or 4: wherein said drive unit is made of a motor or an electromagnetic actuator.

6. A vehicle occupant restraint device as set forth in claim 2, 3, 4 or 5: wherein said rotating shaft is disposed at or near an upper side end portion of the back of said seat, and said arm portion with curved shape is supported with said rotating shaft having rotate capability.

7. A vehicle occupant restraint device as set forth in claim 2, 3, 4, 5 or 6: wherein said shoulder receiving portion includes a support pad for receiving the shoulder side of said occupant softly and a support plate for supporting said support pad; and said support pad is made of an elastic member.

8. A vehicle occupant restraint device as set forth in claim 2, 3, 4, 5 or 6: wherein said shoulder receiving portion includes a support pad for receiving the shoulder side of said occupant softly and a support plate for supporting said support pad; and said support pad includes a small airbag.

9. A vehicle occupant restraint device as set forth in claim 8 comprising an air pump or an inflator unit as a supply source for supplying gas to said airbag.

10. A vehicle occupant restraint device as set forth in claim 9: wherein said rotating shaft and said arm portion are provided

with gas supply passages for supplying the gas from said air pump or said inflator unit to said airbag.

11. A vehicle occupant restraint device as set forth in claim  
5 10: wherein said spline shaft and/or said flat shaft are provided with a notch as a portion of said gas supply passages in a circumference of said spline shaft and/or said flat shaft.

12. A vehicle occupant restraint device as set forth in claim  
10 10: wherein said arm portion is provided with an L-shaped gas passage as a portion of said gas supply passages at a root portion of said arm portion.

13. A vehicle occupant restraint device as set forth in any  
15 of claims 1 to 12: wherein said shoulder receiving portion and/or said rotating shaft are returned to the initial positions so that they can be reused after an action of said vehicle occupant restraint device.

20 14. A occupant restraint system having: a shoulder top restraint device for restraining a shoulder top of an occupant is mounted on one side of the back of an occupant's seat; and an occupant restraint device as set forth in any of claims 1 to 13 is mounted on the other side of said back.

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